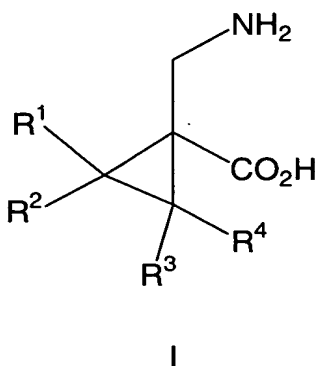


CLAIMS

What is claimed is:

1. A compound of the formula I



wherein R^1 and R^2 are selected, independently, from hydrogen, (C₁–C₁₀)straight or branched alkyl, (C₁–C₁₀)straight or branched alkoxyalkyl, phenyl-(C₁–C₃)straight or branched alkyl and phenyl-(C₁–C₃)straight or branched alkoxyalkyl, wherein said phenyl moieties can optionally be substituted with one or two substituents selected, independently, from halo or (C₁–C₃)alkyl;

or R^1 and R^2 , together with the carbon to which they are attached, form a cyclopentyl, cyclohexyl or cycloheptyl ring which can optionally be substituted with one or two substituents selected, independently, from the group of substituents named in the definition of R^1 and R^2 above; and

R^3 and R^4 are selected, independently, from hydrogen and methyl;
or a pharmaceutically acceptable salt thereof.

2. A compound or salt according to claim 1 that is selected from the following compounds and their pharmaceutically acceptable salts:

1-Aminomethyl-spiro[2.4]heptane-1-carboxylic acid;
1-Aminomethyl-spiro[2.5]octane-1-carboxylic acid;
1-Aminomethyl-spiro[2.6]nonane-1-carboxylic acid;
1-Aminomethyl-5-methyl-spiro[2.4]heptane-1-carboxylic acid;
1-Aminomethyl-2-methyl-spiro[2.6]nonane-1-carboxylic acid;

1-Aminomethyl-2,2-dimethyl-cyclopropanecarboxylic acid;
1-Aminomethyl-2,2-di-n-propyl-cyclopropanecarboxylic acid;
1-Aminomethyl-2-isopropyl-cyclopropanecarboxylic acid;
1-Aminomethyl-2-cyclopropyl-cyclopropanecarboxylic acid;
1-Aminomethyl-2-isobutyl-cyclopropanecarboxylic acid;
1-Aminomethyl-2-(1-ethyl-propyl)-cyclopropanecarboxylic acid;
1-Aminomethyl-2-cyclohexyl-cyclopropanecarboxylic acid; and
1-Aminomethyl-2-(2-phenethyl)-cyclopropanecarboxylic acid.
1-Aminomethyl-spiro[2.3]hexane-1-carboxylic acid;
1-Aminomethyl-spiro[2.7]decane-1-carboxylic acid;
1-Aminomethyl-5,6-dimethyl-spiro[2.4]heptane-1-carboxylic acid;
1-Aminomethyl-5-methyl-spiro[2.5]octane-1-carboxylic acid;
1-Aminomethyl-5,7-dimethyl-spiro[2.5]octane-1-carboxylic acid;
1-Aminomethyl-2,2-dimethyl-spiro[2.6]nonane-1-carboxylic acid;
1-Aminomethyl-2,2-diethyl-cyclopropanecarboxylic acid;
1-Aminomethyl-2,2-di-n-butyl-cyclopropanecarboxylic acid;
1-Aminomethyl-2,2-diisobutyl-cyclopropanecarboxylic acid;
1-Aminomethyl-2-n-propyl-cyclopropanecarboxylic acid;
1-Aminomethyl-2-(2-methyl-butyl)-cyclopropanecarboxylic acid;
1-Aminomethyl-2-(2,2-dimethyl-butyl)-cyclopropanecarboxylic
acid;
1-Aminomethyl-2-(2-methyl-pentyl)-cyclopropanecarboxylic acid;
1-Aminomethyl-2-(2,2-dimethyl-pentyl)-cyclopropanecarboxylic
acid;
1-Aminomethyl-2-(3-ethyl-pentyl)-cyclopropanecarboxylic acid;
1-Aminomethyl-2-(4-ethyl-hexyl)-cyclopropanecarboxylic acid;
1-Aminomethyl-2-(1-methyl-cyclopropylmethyl)-
cyclopropanecarboxylic acid;
1-Aminomethyl-2-(1-ethyl-cyclopropylmethyl)-
cyclopropanecarboxylic acid;
1-Aminomethyl-2-(1-propyl-cyclopropylmethyl)-
cyclopropanecarboxylic acid;
1-Aminomethyl-2-(2-methyl-hexyl)-cyclopropanecarboxylic acid;

1-Aminomethyl-2-(2,2-dimethyl-hexyl)-cyclopropanecarboxylic acid;

1-Aminomethyl-2-(2,6-dimethyl-heptyl)-cyclopropanecarboxylic acid;

1-Aminomethyl-2-(3,7-dimethyl-octyl)-cyclopropanecarboxylic acid;

1-Aminomethyl-2-n-butyl-cyclopropanecarboxylic acid;

1-Aminomethyl-2-cyclobutyl-cyclopropanecarboxylic acid;

1-Aminomethyl-2-cyclopentyl-cyclopropanecarboxylic acid;

1-Aminomethyl-2-cycloheptyl-cyclopropanecarboxylic acid;

1-Aminomethyl-2-cyclopropylmethyl-cyclopropanecarboxylic acid;

1-Aminomethyl-2-cyclohexylmethyl-cyclopropanecarboxylic acid;

1-Aminomethyl-2-(2-cyclohexyl-ethyl)-cyclopropanecarboxylic acid;

1-Aminomethyl-2-phenyl-cyclopropanecarboxylic acid; and

1-Aminomethyl-2-benzyl-cyclopropanecarboxylic acid.

3. A pharmaceutical composition comprising a compound or salt according to claim 1, and a pharmaceutically acceptable carrier.

4. A method of treating a disorder or condition selected from faintness attacks, epilepsy, asphyxia, general anoxia, hypoxia, spinal cord trauma, traumatic brain injury, head trauma, cerebral ischemia, stroke (including thromboembolic stroke, focal ischemia, global ischemia, transient cerebral ischemia attacks and other cerebral vascular problems accompanied by cerebral ischemia such as in patients undergoing carotid endarterectomy or other vascular surgical procedures in general or diagnostic vascular surgical procedures such as angiography), cramp caused by thiosemicarbazide, cardiazole cramp, and cerebral vascular disorders due to acute or chronic cerebrovascular damage such as cerebral infarction, subarachnoid haemorrhage or cerebral oedema in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

5. A method of treating a disorder or condition selected from the group consisting of neurocardiac disorders such as neurocardiac syncope, neurogenic syncope; hypersensitive Carotid sinus, neurovascular syndrome and arrhythmias including arrhythmias secondary to gastrointestinal disturbances in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

6. A method of treating a disorder or condition selected from acute pain, chronic pain, pain resulting from soft tissue and peripheral damage such as acute trauma; postherpetic neuralgia, occipital neuralgia, trigeminal neuralgia, segmental or intercostal neuralgia and other neuralgias; pain associated with osteoarthritis and rheumatoid arthritis; musculo-skeletal pain such as pain associated with strains, sprains and trauma such as broken bones; spinal pain, central nervous system pain such as pain due to spinal cord or brain stem damage; lower back pain, sciatica, dental pain, myofascial pain syndromes, episiotomy pain, gout pain, and pain resulting from burns; deep and visceral pain, such as heart pain; muscle pain, eye pain, inflammatory pain, orofacial pain, for example, odontalgia; abdominal pain, and gynecological pain, for example, dysmenorrhoea, labour pain and pain associated with endometriosis; somatogenic pain; pain associated with nerve and root damage, such as pain associated with peripheral nerve disorders, for example, nerve entrapment and brachial plexus avulsions; pain associated with limb amputation, tic douloureux, neuroma, or vasculitis; diabetic neuropathy, chemotherapy-induced-neuropathy, acute herpetic and postherpetic neuralgia; atypical facial pain, neuropathic lower back pain, and arachnoiditis, trigeminal neuralgia, occipital neuralgia, segmental or intercostal neuralgia, HIV related neuralgias and AIDS related neuralgias and other neuralgias; allodynia, hyperalgesia, burn pain, idiopathic pain, pain caused by chemotherapy; occipital neuralgia, psychogenic pain, brachial plexus avulsion, pain associated with restless legs syndrome; pain associated with gallstones; pain caused by chronic alcoholism or hypothyroidism or uremia or vitamin deficiencies; neuropathic and non-neuropathic pain associated with carcinoma, often referred to as cancer pain, phantom limb

pain, functional abdominal pain, headache, including migraine with aura, migraine without aura and other vascular headaches, acute or chronic tension headache, sinus headache and cluster headache; temperomandibular pain and maxillary sinus pain; pain resulting from ankylosing spondylitis; pain caused by increased bladder contractions; post operative pain, scar pain, and chronic non-neuropathic pain such as pain associated with HIV, anthralgia, vasculitis and fibromyalgia in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

7. A method of treating a disorder or condition selected from mood disorders, such as depression, or more particularly, depressive disorders, for example, major depressive disorder, severe unipolar recurrent major depressive episodes, dysthymic disorder, depressive neurosis and neurotic depression, melancholic depression including anorexia, weight loss, insomnia, early morning waking or psychomotor retardation, atypical depression (or reactive depression) including increased appetite, hypersomnia, psychomotor agitation or irritability; treatment resistant depression; seasonal affective disorder and pediatric depression; premenstrual syndrome, premenstrual dysphoric disorder, hot flashes, bipolar disorders or manic depression, for example, bipolar I disorder, bipolar II disorder and cyclothymic disorder; seasonal affective disorder, conduct disorder and disruptive behavior disorder; stress related somatic disorders and anxiety disorders, such as childhood anxiety disorder, panic disorder with or without agoraphobia, agoraphobia without history of panic disorder, specific phobias (*e.g.*, specific animal phobias), social anxiety disorder, social phobia, obsessive-compulsive disorder, stress disorders including post-traumatic stress disorder and acute stress disorder, and generalized anxiety disorder in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

8. A method of treating a disorder or condition selected from the group consisting of borderline personality disorder; schizophrenia and other psychotic disorders, for example, schizophreniform disorders, schizoaffective

disorders, delusional disorders, brief psychotic disorders, shared psychotic disorders, psychotic disorders due to a general medical condition, psychotic disorders with delusions or hallucinations, substance induced psychotic disorder, psychotic episodes of anxiety, anxiety associated with psychosis, psychotic mood disorders such as severe major depressive disorder; mood disorders associated with psychotic disorders such as acute mania and depression associated with bipolar disorder, mood disorders associated with schizophrenia; and behavioral disturbances associated with mental retardation in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

9. A method of treating a disorder or condition selected from the group consisting of sleep disorders such as insomnia (*e.g.*, primary insomnia, including psychophysiological and idiopathic insomnia, secondary insomnia, including insomnia secondary to restless legs syndrome, Parkinson's disease or another chronic disorder, and transient insomnia), somnambulism, sleep deprivation, REM sleep disorders, sleep apnea, hypersomnia, parasomnias, sleep-wake cycle disorders, jet lag, narcolepsy, sleep disorders associated with shift work or irregular work schedules, deficient sleep quality due to a decrease in slow wave sleep caused by medications or other sources, and other sleep disorders in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

10. A method of increasing slow wave sleep and increasing growth hormone secretion in a human subject comprising administering to a human subject in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

11. A method of treating a disorder or condition selected from the group consisting of respiratory diseases, particularly those associated with excess mucus secretion, such as chronic obstructive airways disease, bronchopneumonia, chronic bronchitis, cystic fibrosis, adult respiratory distress syndrome, and bronchospasm; cough, whooping cough, angiotensin

converting enzyme (ACE) induced cough, pulmonary tuberculosis, allergies such as eczema and rhinitis; contact dermatitis, atopic dermatitis, urticaria, and other eczematoid dermatitis; itching, hemodialysis associated itching; inflammatory diseases such as inflammatory bowel disease, psoriasis, osteoarthritis, cartilage damage (*e.g.*, cartilage damage resulting from physical activity or osteoarthritis), rheumatoid arthritis, psoriatic arthritis, asthma, pruritis and sunburn; and hypersensitivity disorders such as poison ivy in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

12. A method of treating a disorder or condition selected from the group consisting of neurodegenerative disorders, such as Parkinson's disease (PD), Huntington's disease (HD) and Alzheimer's disease (AD); delirium, dementias (*e.g.*, senile dementia of the Alzheimer's type, senile dementia, vascular dementia, HIV-1 associated dementia, AIDS dementia complex (ADC), dementias due to head trauma, Parkinson's disease, Huntington's disease, Pick's disease, Creutzfeldt-Jakob disease, or due to multiple etiologies), amnesic disorders, other cognitive or memory disorders, and behavioral symptoms of dementia in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

13. A method of treating a disorder or condition selected from the group consisting of Down's syndrome; Sjogren's syndrome, hypertension, hematopoiesis, postoperative neuroma, benign prostatic hypertrophy, periodontal disease, hemorrhoids and anal fissures, infertility, reflex sympathetic dystrophy, hepatitis, tenalgia attendant to hyperlipidemia, vasodilation, fibrosing and collagen diseases such as scleroderma and eosinophilic fasciitis; and vasospastic diseases such as angina, migraine and Reynaud's disease in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

14. A method of treating a disorder or condition selected from the group consisting of ophthalmic diseases such as dry eye syndrome,

conjunctivitis, vernal conjunctivitis, and the like; and ophthalmic conditions associated with cell proliferation such as proliferative vitreoretinopathy in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

15. A method of treating a disorder or condition selected from the group consisting of autism, attention deficit hyperactivity disorder (ADHD), angiogenesis (*i.e.*, use for the inhibition of angiogenesis), Reiter's syndrome and anarthropathies in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

16. A method of treating a disorder or condition selected from the group consisting of substance-related disorders arising from the use of alcohol, amphetamines (or amphetamine-like substances) caffeine, cannabis, cocaine, hallucinogens, inhalants and aerosol propellants, nicotine, opioids, phenylglycidine derivatives, sedatives, hypnotics, and anxiolytics, which substance-related disorders include dependence and abuse, intoxication, withdrawal, intoxication delirium and withdrawal delirium; and addiction disorders involving addictions to behaviors (*e.g.*, addictions to gambling and other addictive behaviors) in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

17. A method of treating a disorder or condition selected from the group consisting of Down's syndrome; demyelinating diseases such as multiple sclerosis (MS) and amyotrophic lateral sclerosis (ALS) in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

18. A method of treating a disorder or condition selected from the group consisting of pervasive development disorder, fibromyalgia, human immunodeficiency virus (HIV) infections; HIV encephalopathy; dissociative disorders such as body dysmorphic disorders; eating disorder such as anorexia and bulimia; ulcerative colitis; Crohn's disease; irritable bowel syndrome; chronic

fatigue syndrome; sudden infant death syndrome (SIDS); overactive bladder; lower urinary tract symptoms of overactive bladder; chronic cystitis; chemotherapy induced cystitis; cough, angiotensin converting enzyme (ACE) induced cough, itch, hiccups, premenstrual syndrome, premenstrual dysphoric disorder, amenorrheic disorders such as desmenorrhea; reflex sympathetic dystrophy such as shoulder/hand syndrome; plasma extravasation resulting from cytokine chemotherapy; disorders of bladder function such as chronic cystitis, bladder detrusor hyper-reflexia, inflammation of the urinary tract and urinary incontinence, including urinary urge incontinence, overactive bladder, stress incontinence and mixed incontinence; fibrosing and collagen diseases such as scleroderma and eosinophilic fascioliasis; blood flow disorders caused by vasodilation and vasospastic diseases such as angina and Reynaud's disease; sexual dysfunctions including premature ejaculation and male erectile dysfunction in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

19. A method of treating a disorder or condition selected from the group consisting of movement disorders such as primary movement disorders, akinesias, dyskinesias (*e.g.*, familial paroxysmal dyskinesia, tardive dyskinesia, tremor, chorea, myoclonus, tics and other dyskinesias) spasticities, Tourette's syndrome, Scott syndrome, palsys (*e.g.*, Bell's palsy, cerebral palsy, birth palsy, brachial palsy, wasting palsy, ischemic palsy, progressive bulbar palsy and other palsys), akinetic-rigid syndrome; extra-pyramidal movement disorders such as medication-induced movement disorders, for example, neuroleptic-induced Parkinsonism, neuroleptic malignant syndrome, neuroleptic-induced acute dystonia, neuroleptic-induced acute akathisia, neuroleptic-induced tardive dyskinesia and medication-induced postural tremour; restless legs syndrome and movement disorders associated with Parkinson's disease or Huntington's disease in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

20. A method of treating a disorder or condition selected from the group consisting of mastalgia syndromes, motion sickness, systemic lupus erythematosus and immune dysfunctions (e.g., stress induced immune dysfunctions such as idiopathic immune dysfunctions, post infection immune dysfunctions, post lumpectomy immune dysfunctions, porcine stress syndrome, bovine shipping fever, equine paroxysmal fibrillation, confinement dysfunction in chicken, sheering stress in sheep, and human-animal interaction stress in dogs) in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

21. A method of treating a disorder or condition selected from the group consisting of gastrointestinal (GI) disorders, including inflammatory gastrointestinal disorders such as inflammation bowel disease, disorders caused by *helicobacter pylori* and diseases of the GI tract such as gastritis, proctitis, gastroduodenal ulcers, peptic ulcers, dyspepsia, disorders associated with the neuronal control of viscera, ulcerative colitis, chronic pancreatitis, Crohn's disease, irritable bowel syndrome and emesis, including post operative nausea and post operative vomiting, and including acute, delayed or anticipatory emesis (emesis includes emesis induced by chemotherapy, radiation, toxins, viral or bacterial infections, pregnancy, vestibular disorders, for example, motion sickness, vertigo, dizziness and Meniere's disease, surgery, migraine, variations in intracranial pressure, gastro-oesophageal reflux disease, acid indigestion, over indulgence in food or drink, acid stomach, waterbrash or regurgitation, heartburn, for example, episodic, nocturnal or meal-induced heartburn, and dyspepsia) in a mammal, comprising administering to a mammal in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.

22. A method of treating a disorder or condition selected from the group consisting of neoplasms, including breast tumours, gastric carcinomas, gastric lymphomas, neuroganglioblastomas and small cell carcinomas such as small cell lung cancer in a mammal, comprising administering to a mammal

in need of such treatment a therapeutically effective amount of a compound or salt according to claim 1.